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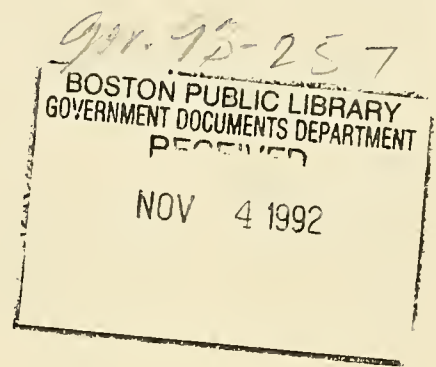
# **EDIC/Boston**

*Boston's Economic Development Agency*

43 Hawkins Street, Boston, MA 02114 / 617 635-3342

FAX 617 635-4286

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# **ENVIRONMENTAL JOBS FOR THE FUTURE**

## **An Action Plan for 10,000 Jobs And A Clean Environment In Boston**



**Raymond L. Flynn**  
*Mayor of Boston*  
**Donald A. Gillis**  
*Executive Director*

**EDIC/Boston**  
Economic Development and  
Industrial Corporation  
Stuart J. Vidockler, Chairman  
Kevin C. Phelan, Vice Chairman  
Marguente H. Connaughton  
Robert W. Consalvo  
Timothy W. Kilduff  
J.D. Nelson  
Fletcher H. Wiley, Esq.

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# ENVIRONMENTAL JOBS FOR THE FUTURE

## AN ACTION PLAN FOR 10,000 JOBS AND A CLEAN ENVIRONMENT IN BOSTON

Japanese representatives to the Earth Summit in June came to Rio de Janeiro ready to do business. They saw new opportunities for profits in recycling, environmental technology and clean up efforts.

Boston was represented in Rio de Janeiro as well, by the two year old Environmental Business Council who came without government support to drum up new business. But, unlike Japan, the United States does not have a plan to convert environmental crises and regulations into new business and job opportunities.

A national debate is now underway and is being played out in the Presidential race. One side argues that environmental regulation hurts business and economic growth. The other side argues that environmental regulation will create both a healthy environment and new industries and jobs. In Boston, we see the economic development opportunities made available by cleaning our environment, and we are taking steps to implement them.

**This paper is a brief description of how Boston can create more than 10,000 new jobs over the next five years by expanding the city's environmental industry.**

Boston's environmental industry is made up of a diverse set of companies carrying out services or creating products which help mitigate environmental problems. Though this is a relatively new industry, rapid growth and an unusual concentration of innovative companies have made the industry a leading employer in the state and Boston. Estimates are that over 100,000 people are employed in the environmental industry in Massachusetts and over 20,000 in Boston.

The environmental industry can be divided into two relatively distinct sectors: those companies whose focus is solid waste handling, and those whose focus is the management and clean up of environmental hazards. The solid waste sector consists largely of recyclers, and manufacturers of recycled products. The environmental mitigation sector includes companies which manufacture products or provide services to monitor, mitigate and clean up environmental problems. This sector includes water treatment; hazardous materials testing, mitigation and processing; energy conservation; and the manufacturing of environmental equipment and products, among others. Boston is well represented in both sectors of the industry and holds significant job growth potential in both.



## **Solid Waste Management and Recycling**

Solid waste management through recycling offers local governments many economic and environmental benefits, including reduced disposal costs and avoidance of dumping and incineration. It is estimated that as an alternative to solid waste disposal, recycling can save a municipality between \$23 and \$35 per ton.

Though it has received less attention, recycling can also offer important economic development benefits in the form of jobs and tax revenues, particularly for large urban areas which have a tremendous need for new job generating industry. Because cities have large quantities of recyclable materials, and unprocessed material is very expensive to ship, recycling industries can add significant value by processing materials locally. Additionally, as raw materials become more expensive, and the use of recycled materials is legislatively mandated, refinement of recycled materials and the manufacturing of recycled end products are becoming increasingly viable business enterprises.

It is estimated that recycling municipal waste directly creates one job in collection and processing for every 465 tons of annual material recycling. For Boston, this translates into approximately 150 to 200 jobs related strictly to the collection, sorting and shipping operations that typify Materials Recycling Facilities (MRF). In a number of industries, high virgin materials costs and regulatory requirements are driving the creation of refinement and manufacturing operations for recycled materials, particularly in the areas of paper, plastics, glass, and metals. These refinement and manufacturing operations can generate more jobs than recycling sorting operations.

In Boston, for example, the Patriot Paper mill, one of the oldest paper mills in the nation, currently recycles white office paper through a sophisticated de-inking and pulping operation. This mill employs 200 full time workers in the Hyde Park neighborhood of Boston. While the Hyde Park mill does not depend upon the municipal waste stream for its raw materials, other processing operations utilize newsprint, plastics, glass and metals.

Operations like the Patriot Paper mill are important manufacturers of end products. Other operations process recycled materials into the feedstock for end users. A July 1992 study by the Massachusetts Department of Environmental Protection estimated that the processing of recycled materials in the state added \$588 million to the state economy through refinement. The study also notes that several important manufacturing industries in the state in plastics, glass, and paper, rely on feedstock from distant states with abundant raw materials. By increasingly utilizing recycled feedstocks, these industries keep dollars circulating in the state, and maintain their cost competitiveness.





## THE PROGRAM CORE: BOSTON'S MUNICIPAL RECYCLING FACILITY

For Boston, like other cities, expanding recycling programs requires lowering its cost, and cost cutting requires establishing a Municipal Recycling Facility (MRF) to allow proper collection, sorting, and processing of recyclables. Establishment of a MRF also is the core of Boston's recycling program and the economic development benefits it will bring. Only by concentrating all recycling collection and processing in one or more central facilities can Boston produce the raw materials necessary to support secondary recycling refining and manufacturing companies.

Boston's MRF, when developed by a partnership of the Boston Public Works Department and the Economic Development and Industrial Corporation, will be the most important recycling development project in the region because of the critical importance of Boston's large waste stream and the necessity to process recyclables for the surrounding communities. It is anticipated that Boston's MRF, projected to be fully operational by early 1994, will be designed to take in and process 250 to 500 tons per day of recyclables. The facility will initially process paper, plastics, glass, and metal cans. Projections suggest that the facility will employ between 40 and 70 full time workers in addition to 70 to 140 additional employees of the collection operation.

Though end markets for recycled materials continue to fluctuate, high quality recyclables are sold with reasonable returns by successful MRFs. Though Boston's MRF will likely sell the majority of its product to refiners and end users outside of the city limits, the long term growth of the MRF and the ultimate job benefits will be captured through the growth of secondary refining and manufacturers inside the city limits.

### MRF Related Businesses

#### Newsprint

The recession's dampening impact on the paper industry has slowed new de-inking facility construction, but, with a long-term shortage of such facilities in the Northeast, several major paper companies, including Kruger and Georgia Pacific are planning or constructing new de-inking facilities in Canada and New York state.

Several paper companies have made specific inquiries into sites and potential financing sources to build newsprint de-inking facilities in the Boston area. The construction of a MRF, along with anticipated regulatory requirements for using recycled





newsprint should make a de-inking facility feasible in Boston. **Such a facility would employ approximately 150 people.**

The wide availability of old newspaper in the Northeast should make it feasible for manufacturers of cellulose products to locate their operations in Boston. To date, several companies interested in manufacturing molded pulp product containers and insulation have expressed serious interest in building facilities in Boston. Such a facility would employ approximately 50 people.

### Tin cans

De-tinning operations separate the tin from the steel in cans and then make this valuable raw material available at a lesser cost than virgin material. At this time only two de-tinning plants are operating near the northeast region, in Baltimore and Ohio. Current estimates are that there is adequate supply and demand in the Boston area to support at least two de-tinning operations. The nation's two major de-tinning operations are currently seeking cleaning and shredding operations in Boston and may be seeking a de-tinning facility as well. **Such facilities would employ between 50 to 100 people.**

### Plastics

Interest in recycling by the plastics industry has given rise to both demonstration and manufacturing facilities for plastics recycling. Boston has long been seen as a prime location for plastics recycling operations. At a minimum, Boston can support a cleaning and flaking operation, and may be able to support a pelletizing operation, which is the final step before shipping to manufacturers of plastic products. **A Plastics processing facility would employ approximately 35 to 50 people.**

### Glass

Processing of glass cullet or clean, sorted, crushed glass also presents several manufacturing opportunities. In addition to a glass processing facility, operations which create new glass or other related materials such as foam glass and glass polymer composites are likely new industries. **Such a glass processing or manufacturing facility would employ approximately 50 people.**

### Non residential recycling

As Massachusetts waste bans go into effect between now and 1994, and the cost of landfilling continues to rise, many recycling manufacturing opportunities will be created for the City of Boston. To date, serious private proposals for several recycling projects for materials not in the residential waste stream are being reviewed by EDIC. These include:



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<http://www.archive.org/details/environmentaljob00bost>

■ **Roofing material recycling:** This proposal for a 35,000 square foot facility will take roofing material from construction sites and re-process into several road construction and repair and construction materials. The facility will employ approximately 50 people.

■ **Diaper recycling:** Diapers currently make up a large portion of the commercial and residential waste stream. This proposal calls for the construction of a 40,000 square foot facility in Boston to recycle diapers into several component parts for re-use in manufacturing. The facility will begin with commercial diapers and eventually move into the residential market. The facility will employ approximately 35 people.

■ **White goods:** Waste bans on white goods (refrigerators, washing machines etc.) will require specialized recycling efforts for these bulky products. EDIC is currently exploring the development of a white goods recycling facility in Boston by a private company currently operating two such facilities elsewhere in the country. The facility will employ approximately 50 to 100 people.

■ **Fluorescent bulbs:** Utility industry initiatives have supported pilot operations to recycle the component parts of fluorescent bulbs, which contain mercury and require very specialized handling. EDIC is exploring the siting of a fluorescent bulb recycling operation in Boston which would employ approximately 25 people.

## ENVIRO-TECH INDUSTRIES

According to the Massachusetts Environmental Business Council, "the Envirotech Industry includes environmental and energy companies that manufacture products or provide services, educational institutions and government entities" in such areas as clean water and air, hazardous waste evaluation and removal, and energy conservation.

Boston is perhaps the national center of the relatively unknown, but rapidly growing environmental industry. Dozens of engineering, consulting, environmental testing, mitigation, instrument manufacturing, environmental software and conservation companies are located in and around Boston and employ more than 20,000 people in metropolitan Boston.

The metropolitan Boston area is home to several dozen nationally prominent consulting, engineering, and manufacturing firms such as Clean Harbors and Groundwater Technology Inc. which specialize in the field of clean air and water. In addition, the region's universities like Tufts and U-Mass Lowell have some of the leading research centers in this field. This important





agglomeration can be used as a draw for developing and attracting new firms to the city as new federal and state clean water and air regulations take effect.

Ongoing implementation of federal and state hazardous waste legislation and regulations has and will continue to provide significant business opportunities in dealing with materials such as asbestos, lead, toxic chemicals, petrochemicals, and radioactive waste. Massachusetts is already home to nearly 100 firms specializing in the testing and mitigation of such wastes and Boston clearly has the potential to see significant new growth in this industry segment.

Increasingly, biotechnology is employed to solve environmental problems. One Boston firm has developed microbes which reduce the sulfur content of oil. The use of microbes in oil spills has received much publicity. Given the rich biotechnology expertise in the region, there is opportunity to attract and expand firms in this field.

As one of the nation's leading engineering centers, metro Boston is home to a significant number of firms and universities specializing in energy conservation and development. Some of the leading national firms such as Tellus, Conservation Services Group, and Stone and Webster are located in Boston and the city has become a draw for the industry.

Heightened activity in solid waste, air and water quality testing has increased the need for services to test the composition and properties of certain materials. Massachusetts is home to more than 50 such firms, and Boston is the center of this industry sector. Growth projections suggest that this segment of the industry will continue to grow significantly over the coming five years.

Recent state surveys of Massachusetts envirotech companies suggest that the industry will experience an average annual growth rate of 15 percent and similar increases in employment. It is not unreasonable to expect that with the proper support and resources, the envirotech industry in Boston will generate approximately 10,000 new jobs over the next five years.

## **EDIC RESOURCES AVAILABLE FOR THE ENVIRONMENTAL INDUSTRY**

### **FINANCING**

EDIC has targeted its financing resources to support the environmental industry. EDIC's affiliate, the Boston Local Development Corporation (BLDC) provides working capital and other debt to small to medium environmental and other firms. The Boston Industrial Development Finance Authority (BIDFA) provides tax-exempt bond financing for solid waste, industrial, and other





facilities. BIDFA has provided financing for the Patriot Paper and Jet-A-Way recycling facilities and for the Harbor Electric Facility as part of the MWRA Boston Harbor Clean-up project.

#### **FACILITIES**

EDIC owns and operates three industrial parks in Boston which are home to more than 150 firms, including several leaders in the environmental field. These high quality industrial facilities offer competitively priced space for virtually any company's needs. Additionally, EDIC will establish the Environmental Innovation Center at the Marine Industrial Park to house newly emerging environmental companies.

#### **JOB TRAINING**

EDIC manages nearly \$15 million annually in job training and support service funds. Current programs include basic skills training, literacy, and specialized industry skills. Pilot training programs are starting this Fall with Patriot Paper and the Conservation Services Group.

#### **PERMITTING AND REGULATORY ASSISTANCE**

EDIC works closely with the state Department of Environmental Protection and other City agencies to facilitate siting and permitting for environmental and other industries. EDIC maintains a up-to-date inventory of available commercial and industrial sites in Boston and can help companies find and locate in the appropriate facility.



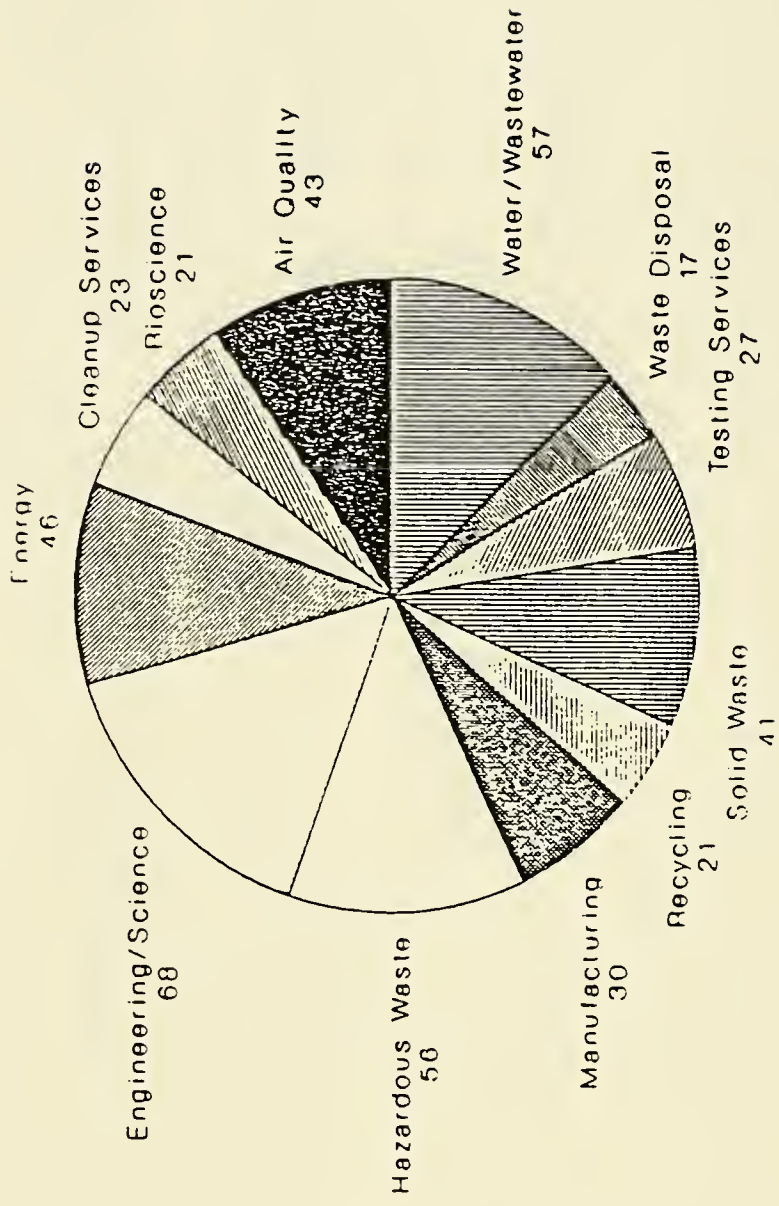
**EDIC/CITY OF BOSTON ENVIRONMENTAL INDUSTRY ACTION PLAN**

<u>TARGET DATE</u>	<u>PROJECT</u>	<u>JOBS</u>
■ 9/92-1/94	SITE AND BUILD MUNICIPAL RECYCLING FACILITY	125 - 240 JOBS
■ 1/93-1/97	RECRUIT AND SITE MRF RELATED RECYCLING COMPANIES	
	Plastics, glass, de-tinning, de-inking and newsprint facilities	285-400
■ 9/92-9/97	RECRUIT AND SITE NON RESIDENTIAL RECYCLING COMPANIES	
	Roofing, diapers, white goods, fluorescent bulb facilities	160-210
■ 1/93	OPEN ENVIRONMENTAL INNOVATION CENTER	
■ 9/93-9/97	PROVIDE FINANCING, TECHNICAL SUPPORT, SITING ASSISTANCE AND RECRUITMENT OF ENVIRO-TECH COMPANIES	10,000





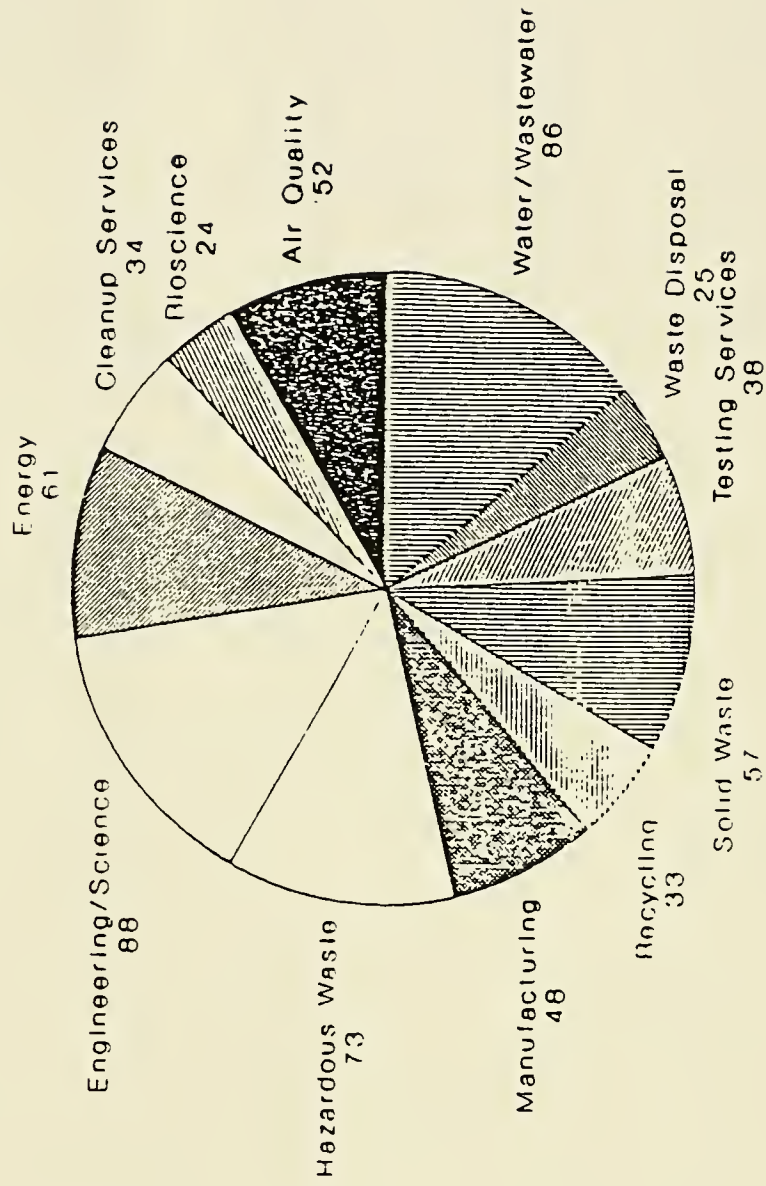
# Composition of Metro Boston's Environmental Technology Companies



Source: Dir. of Environmental Companies



# Composition of Massachusetts' Environmental Technology Companies



Source: Dir. of Environmental Companies

